EXAMINER'S AMENDMENT

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This listing of claims replaces all prior versions of claims listings in the application.

LISTING OF CLAIMS

1. (Previously Amended) A method of transmitting data securely from a source point to a target point in a point-to-multipoint communication network, the method comprising the steps of:

(a) forming an encryption tag field including information relating to an encryption tag type indicating whether transmission data is encryption-enabled or encryption-disabled and an encryption tag information field for providing information relating to one of a key synchronization, a version, and an initialization vector (IV) of an optical network unit;

(b) forming a packet data field including encrypted transmission data;

(c) forming a first integrity check field indicating a CRC (Cyclic Redundancy Check) check sum of the encrypted transmission data;

(d) forming a second integrity check field indicating a check sum of the transmission frame and adding the second integrity check field to the transmission frame for a subsequent transmission and,

(e) forming a transmission frame including the formed fields from steps (a)-(d), a source address field indicating the address of the source point and a destination address field indicating fine address of the target point.

2. (Cancelled)

3. (Amended) The method of claim [[2]] 1, further comprising the steps of:

(g) receiving and performing a first integrity check on the transmission frame using the second integrity check field;

(h) decrypting the transmission frame without the second integrity check field; and,

(i) performing a second integrity check on the decrypted transmission frame using the first integrity check field.

4. (Original) The method of claim 3, wherein the transmission frame is decrypted according to the destination address field of the decryption step (h).

5. (Original) The method of claim 3, further comprising the step (j) of determining whether the check sum of the transmission frame is identical to the value of the second integrity check field of the first integrity check step (g).

6. (Original) The method of claim 5, if the check sum is identical, determining that there is no link error in the point-to-multipoint communication network.

7. (Original) The method of claim 3, further comprising the step of determining whether the check sum of the encrypted transmission data of the transmission frame is identical to the value of the first integrity check field of the second integrity check step (i).

8. (Original) The method of claim 7, if the check sum is identical, determining that the transmission data is originated from an authenticated network device.

9. (Previously Presented) The method of claim 1, further comprising the step of transmitting the encryption tag information field via an operation, administration and maintenance (OAM) message.

10. (Previously Presented) The method of claim 9, wherein, if the encryption tag information field is transmitted via the OAM message, forming the encryption tag field in the step (a) with only the encryption tag type field.

11. (Previously Presented) The method of claim 1, further comprising forming a length and type field indicating the sum of the lengths of the packet data field and the first integrity check field.

12. (Previously Presented) The method of claim 10 wherein in step (a) the encryption tag field further includes encryption tag information field for providing information relating to one of a key synchronization, a version, and an initialization vector (IV) of an optical network unit.

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